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10/018,662	12/21/2001	Carlos Algora	70200-0005	1974

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EXAMINER
DIAMOND, ALAN D

ART UNIT	PAPER NUMBER
1753	7

DATE MAILED: 08/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/018,662	Applicant(s) ALGORA, CARLOS
	Examiner Alan Diamond	Art Unit 1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 July 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *18-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *18-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 December 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Comments

1. A copy of the instant WIPO-stamped Spanish foreign priority document has been obtained from WIPO. Said copy has been placed in the instant file wrapper.

2. The objection to the disclosure for informalities has been overcome by Applicant's amendment thereof.

3. The Examiner acknowledges that claims 1-17 have been canceled, and that new claims 18-34 have been presented.

4. The 35 USC 103(a) rejection over JP '609 in view of Stoner et al is now moot since neither JP '609 nor Stoner et al teaches or suggests the use of luminous power densities greater than 1 W/cm^2 as is now required in instant claim 18.

Claim Objections

5. Claim 32 is objected to because of the following informalities: Claim 32 is missing a period at the end of the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 26 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 26, at line 4, it is not clear what is to be encompassed by the term "(or die attach)". Furthermore, said term lacks positive antecedent support in claim 18.

Claim Rejections - 35 USC § 102/103

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 18, 19, 23, and 26-34 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Dillard, U.S. Patent 5,928,437.

Dillard prepares a microarray comprising a plurality of individual solar cells, wherein photolithography is used for definition of the solar cells, and then sawing is used to separate the cells (see col. 2, line 33 through col. 3, line 44; col. 6, line 25 through col. 7, line 26; and Figures 6 and 7). Each solar cell has an area of, for example, 0.25cm x 0.25cm, which is equal to 6.25 mm^2 (see col. 2, line 27; and col. 5, lines 33-49). The solar cell can be made from GaAs on germanium, or can be a GaAs/GaAs cell or can be a multijunction cell, such as GaInP/GaAs/Ge (see the paragraph bridging cols. 4 and 5). The solar cells can be responsive to infrared radiation (see col. 8, lines 37-43). The microarray can be attached to a coverglass using adhesive (see col. 4, lines 18-30). It is the Examiner's position that Dillard's

microarray works at luminous power densities greater than 1 W/cm^2 because Dillard's solar cells have the same structure as the instantly claimed photovoltaic converter. Since Dillard teaches the limitations of the instant claims, the reference is deemed to be anticipatory.

In addition, the presently claimed characterization that the photovoltaic converter "works at luminous power densities greater than 1 W/cm^2" would obviously have been present once Dillard's microarray is provided. Note In re Best, 195 USPQ at 433, footnote 4 (CCPA 1977) as to the providing of this rejection under 35 USC 103 in addition to the rejection made above under 35 USC 102.

Claim Rejections - 35 USC § 103

11. Claims 18-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fraas et al, U.S. Patent 5,123,968, in view of Tantraporn, U.S. Patent 4,336,009.

Fraas et al teaches GaAs solar cells having a size of 3 mm x 5 mm, i.e., 15 mm^2, wherein photolithography is used to define the frontal grid of the cells (see col. 5, lines 22-30; and col. 5, lines 55-61). The solar cells are used with respective concentrating lenses (12) at a light concentration near 100 suns equivalent, i.e., at power densities that are certainly greater than 1 W/cm^2 (see Figures 1 and 2; col. 3, lines 47-49; and col. 8, lines 45-46). Fraas et al teaches the limitations of the instant claims other than the difference which is discussed below.

Fraas et al does not specifically teach the product-by-process steps of defining numerous photovoltaic converters on a same semiconductor wafer, and separation of the converters on the same semiconductor wafer is carried out by sawing, or by cutting

with a point or cleaving or by other similar technique. However, in order to obtain the GaAs wafer used by Fraas et al to prepare its GaAs solar cell, a skilled artisan would cut a GaAs ribbon or boule into appropriate dimensions, as is conventional in the art and shown by Tantraporn (see col. 1, lines 13-15; and col. 1, line 66 through col. 2, line 2). It is the Examiner's position that Fraas et al's GaAs solar cell prepared from a cut GaAs wafer is essentially the same as the photovoltaic converter here claimed. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have obtained Fraas et al's GaAs wafer by cutting a GaAs ribbon or boule to the appropriate dimensions because such is convention in the art for obtaining a GaAs wafer.

Double Patenting

12. Applicant is advised that should claims 22, 26-29 be found allowable, claims 24, 33, 30-32, respectively, will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Response to Arguments

13. Applicant's arguments filed July 24, 2003 have been fully considered but they are not persuasive.

Applicant argues that Dillard is unrelated to the invention because Dillard is "directed to space applications, whereas the instant invention is intended for terrestrial

use." However, this argument is not deemed to be persuasive because Dillard's solar cell is essentially the same as the instant photovoltaic converter regardless of where the solar cell is used.

Applicant argues that Dillard does not address the range of size claimed, or the high intensity limitation. However, this argument is not deemed to be persuasive because, as noted above, each of Dillard's solar cell has an area of, for example, 0.25cm x 0.25cm, which is equal to 6.25 mm^2 (see col. 2, line 27; and col. 5, lines 33-49). Furthermore, as also noted above, it is the Examiner's position that Dillard's microarray works at luminous power densities greater than 1 W/cm^2 because Dillard's solar cells have the same structure as the instantly claimed photovoltaic converter.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan Diamond whose telephone number is 703-308-0840. The examiner can normally be reached on Monday through Friday, 5:30 a.m. to 2:00 p.m. ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on 703-308-3322. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Alan Diamond
Primary Examiner
Art Unit 1753

Alan Diamond
August 19, 2003